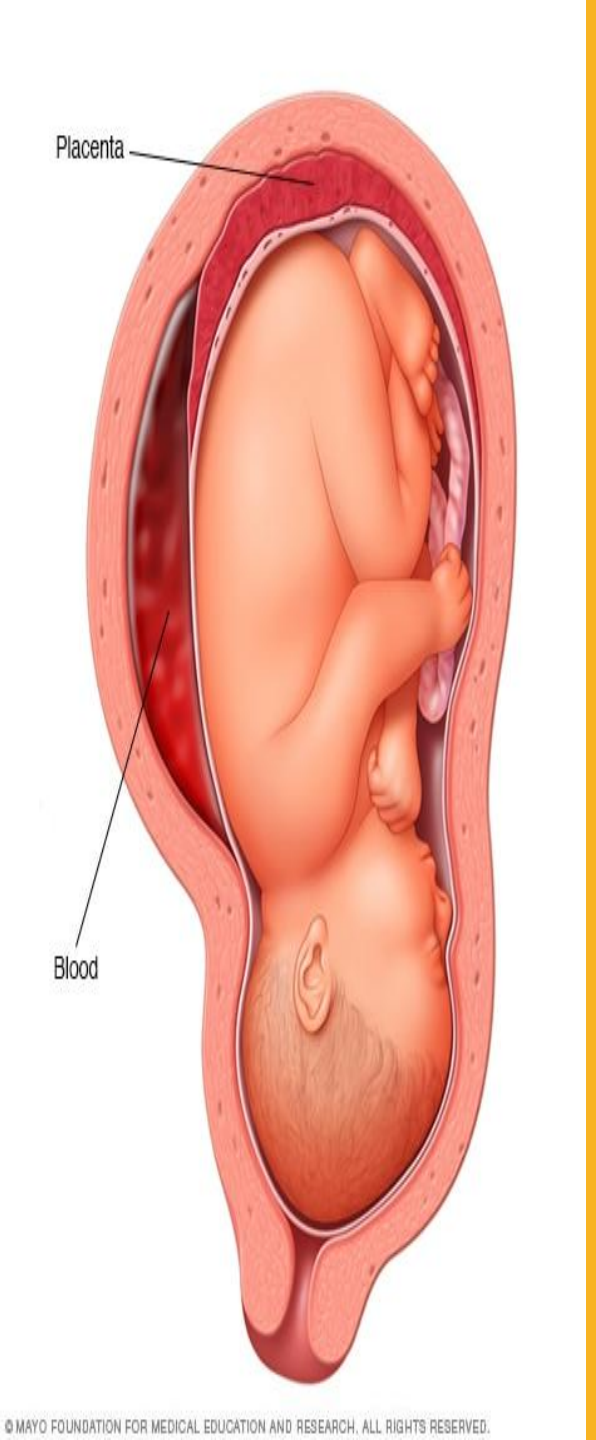
ABRUPTIO PLACENTAE

MS.N.MANAVALAM
PROFESSOR



SPECIFIC OBJECTIVE

- 1.To discuss the introduction of A.P.
- 2.Definition of A.P.
- 3.To enumerate etiological factors and risk factors.
- 4.To discuss the incidence of A.P.
- 5.To explain about the types of A.P.
- 6.To discuss the signs and symptoms of A.P.
- 7.To explain diagnosis and management.

INTRODUCTION

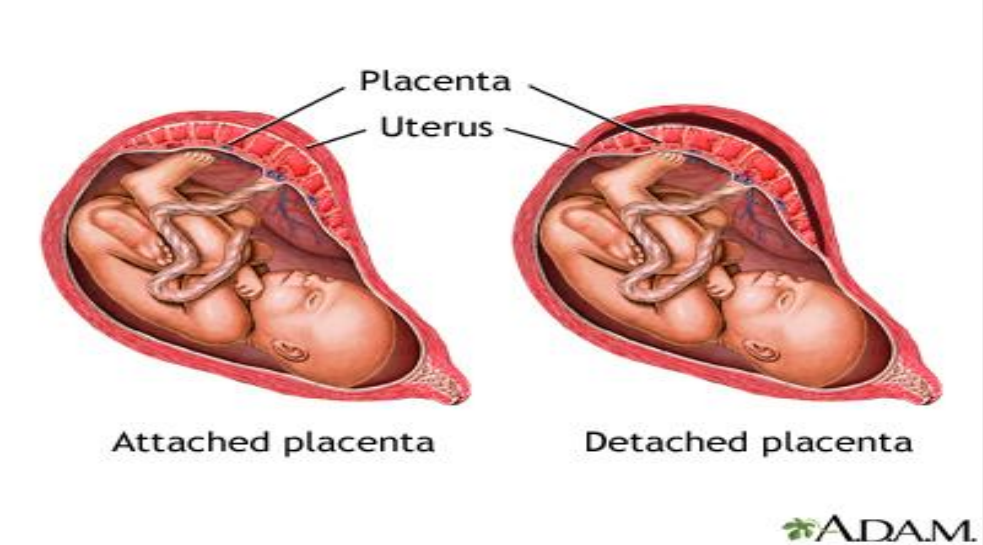
Placental abruption (also referred to as abruptio placentae) is bleeding at the decidual-placental interface that causes partial or complete placental detachment prior to delivery of the fetus.

The diagnosis is typically reserved for pregnancies over 20 weeks of gestation. The major clinical findings are vaginal bleeding and abdominal pain, often accompanied by hypertonic uterine contractions, uterine tenderness, and a non reassuring fetal heart rate (FHR) pattern.

Abruption is a significant cause of maternal and perinatal morbidity, and perinatal mortality. The perinatal mortality rate is approximately 20-fold higher in comparison to pregnancies without abruption (12 percent versus 0.6 percent, respectively).

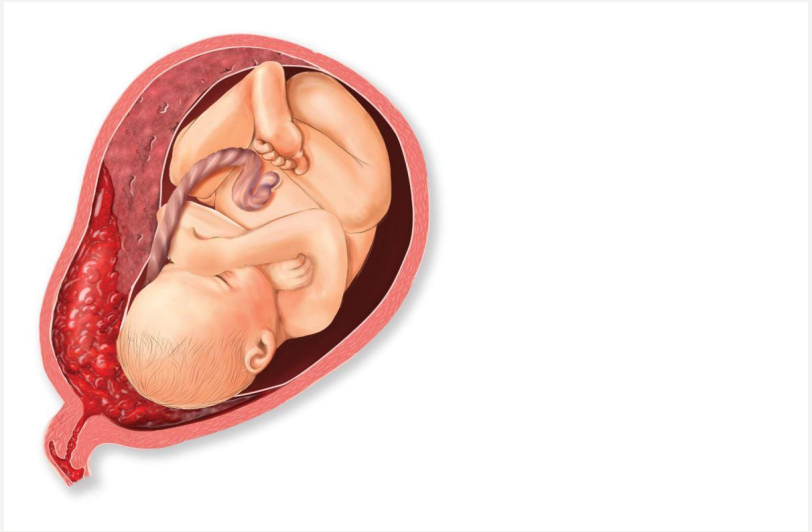
DEFINITION

Abruption placenta are defined as premature separation of a normally situated placenta after 28 weeks gestation and before birth of the baby.

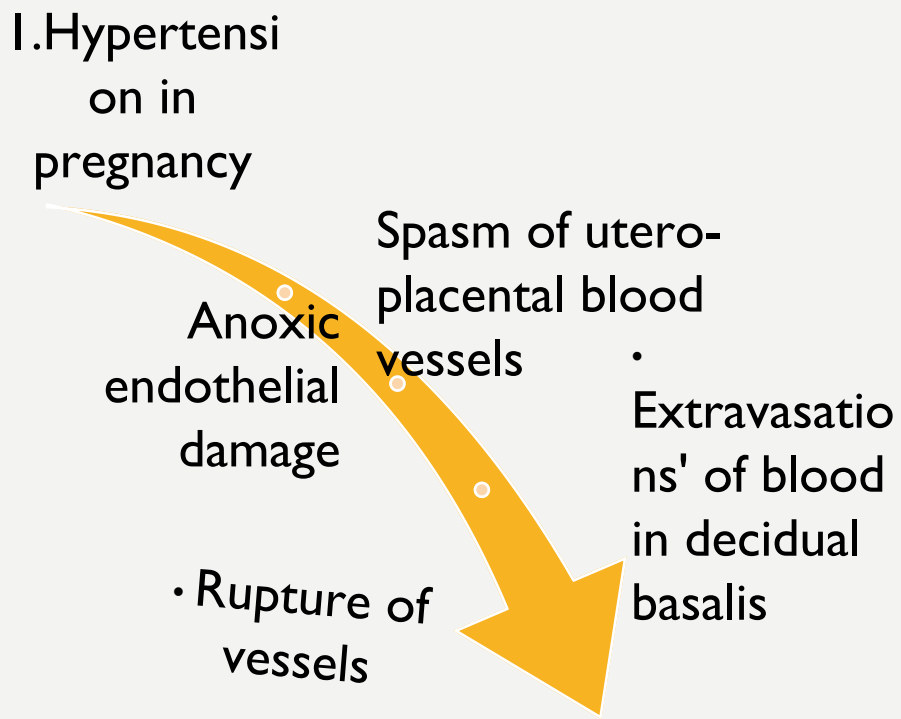


INCIDENCE

- ABRUPTION-5-17% •
- SMOKING -90% INCREASE IN RISK
- PRIMI GRAVIDA -1%
- MULTI GRAVIDA-2.5%



ETIOLOGY


1.Hypertensi
on in
pregnancy
Spasm of utero-
placental blood
vessels
Anoxic
endothelial
damage
• Rupture of
vessels
•
Extravasatio
ns' of blood
in decidual
basalis

ETIOLOGY

- Short cord
- Supine hypotension syndrome
- Placental anomaly
- Sick placenta
- Folic acid deficiency
- Uterine anomaly
- Thrombophilia's

ETIOLOGY

a chronic placental disease process	• In these cases, abnormalities in the early development of the spiral arteries lead to decidual necrosis, placental inflammation and possibly infarction, and ultimately vascular disruption and bleeding
smoking	• Smoking cause placental hypo perfusion, which could result in decidual ischemia, necrosis, and hemorrhage leading to premature placental separation
cocaine	• Cocaine induced vasoconstriction leading to ischemia, reflex vasodilatation, and disruption of vascular integrity
Trauma	• External cephalic version , RTA , Needle puncture during amniocentesis. Which cause shearing of the inelastic placenta due to sudden stretching or contraction of the underlying uterine wall
Uterine anomalies (e.g., bicornuate uterus)	• Uterine synechiae, and leiomyoma are mechanically and biologically unstable sites for placental implantation
Sudden uterine decompression	• Delivery of first twins , Sudden escape of liquor amnii in hydraminous, Premature rupture of membrane

RISK FACTORS

1. High birth order
2. Maternal age;- pregnant women who are younger than 20 or older than 35 are at greater risk .
3. maternal trauma , such as motor vehicle accidents , falls, or nosocomial.
4. Hypertension.
5. Malnutrition , low socio economic status.
6. Smoking or drug use e.g. cocaine
7. Abnormal lie of the baby e.g. transverse
8. Multiple pregnancy

PATHOPHYSIOLOGY

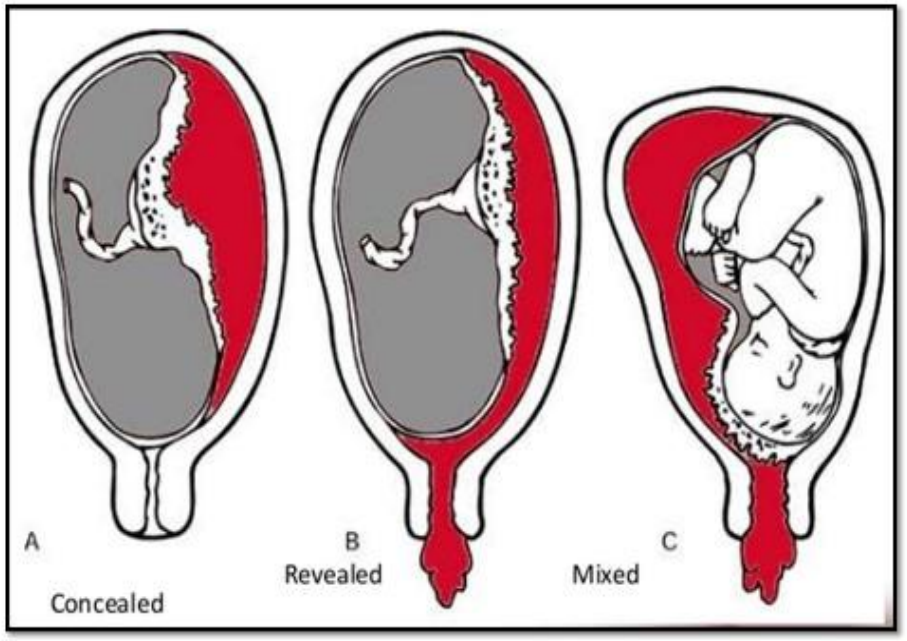
- The immediate cause of the premature placental separation is rupture of maternal vessels in the decidua basalis, where it interfaces with the anchoring villi of the placenta.
- Rarely, the bleeding originates from the fetal-placental vessels.
- The accumulating blood splits the decidua, separating a thin layer of decidua with its placental attachment from the uterus.
- The bleed may be small and self-limited, or may continue to dissect through the placental-decidual interface, leading to complete or near complete placental separation.
- The detached portion of the placenta is unable to exchange gases and nutrients; when the remaining fetoplacental unit is unable to compensate for this loss of function, the fetus becomes compromised.

PATHOPHYSIOLOGY

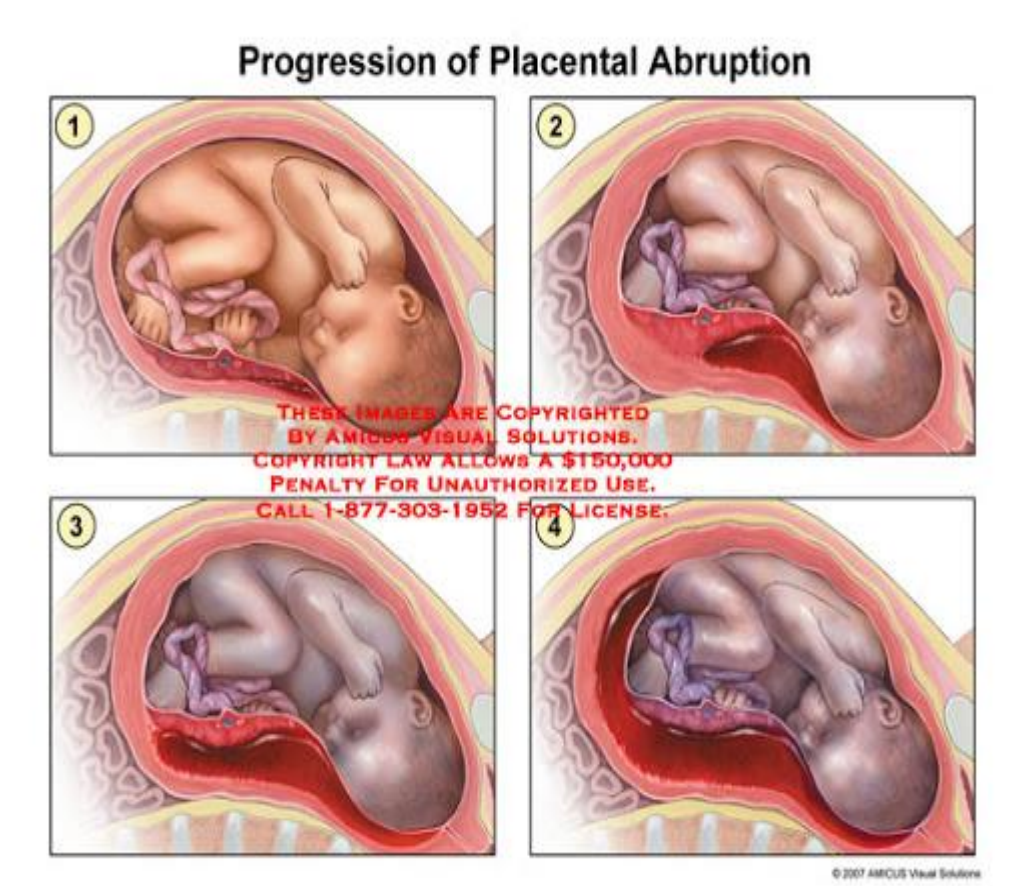
- **Placental abruption** is where a part or all of the placenta separates from the wall of the uterus prematurely.
- Abruption is thought to occur following a rupture of the maternal vessels within the **basal layer** of the endometrium. Blood accumulates and splits the placental attachment from the basal layer. The detached portion of the placenta is unable to function, leading to rapid fetal compromise.
- Couvelaire Uterus -Utero-Placental Apoplexy. Associated with severe form of placental separation with widespread extravasation of blood into the uterine musculature and below the serous coat of the uterus. May lead to uterine tetany, shock and death of the fetus

TYPES

- **Revealed** – bleeding tracks down from the site of placental separation and drains through the cervix. This results in vaginal bleeding.
- **Concealed** – the bleeding remains within the uterus, and typically forms a clot retro placentally. This bleeding is not visible, but can be severe enough to cause systemic shock.
- **Mixed type--** in this type , some part of the blood collects inside and some part is expelled out usually one variety predominates over the other



PLACENTAL ABRUPTION


Progression of Placental Abruption
1
2
3
4
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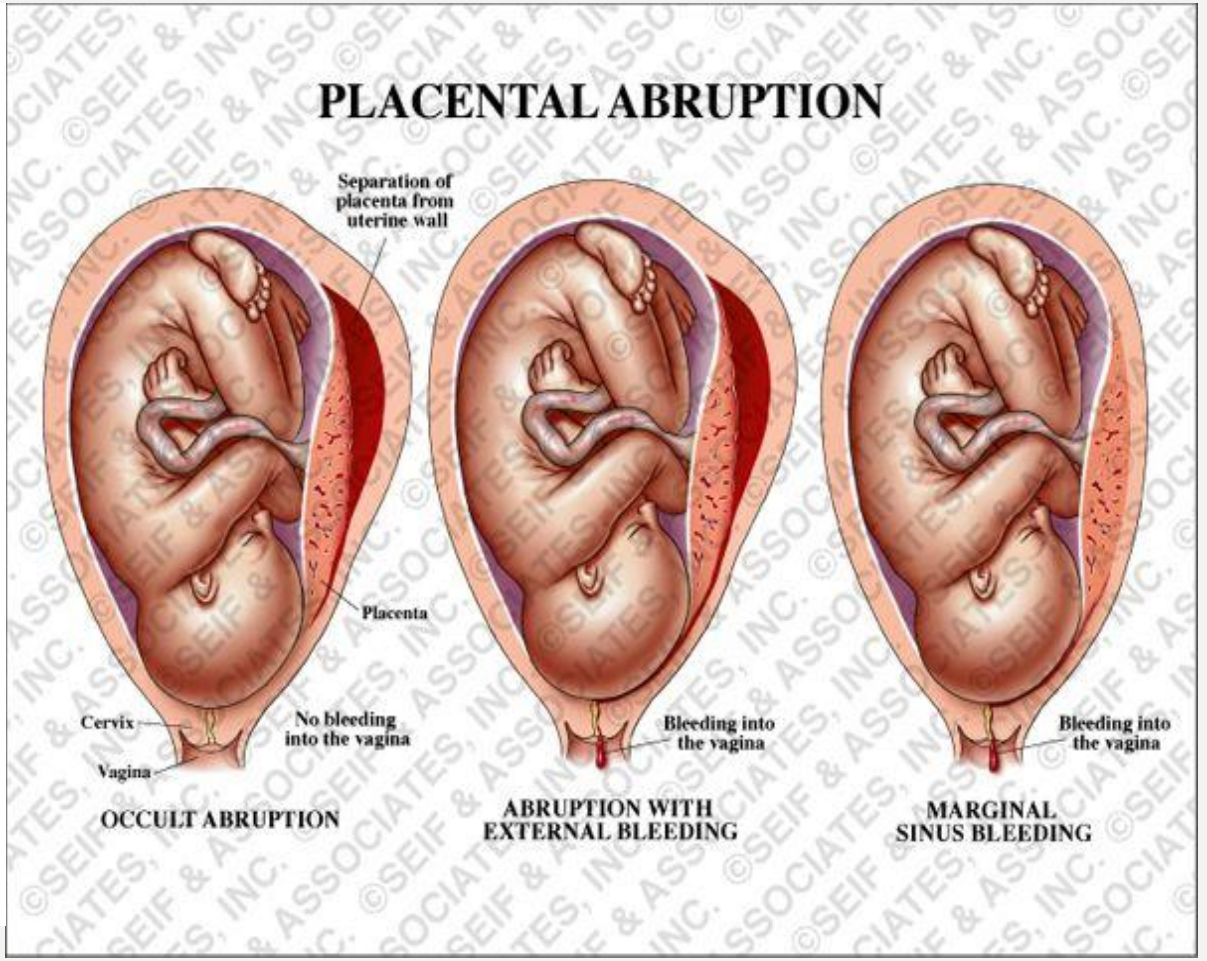

PLACENTAL ABRUPTION
Separation of placenta from uterine wall
Placenta
Cervix
Vagina
No bleeding into the vagina
Bleeding into the vagina
Bleeding into the vagina
OCCULT ABRUPTION
ABRUPTION WITH EXTERNAL BLEEDING
MARGINAL SINUS BLEEDING

SIGN AND SYMPTOMS

- Painful vaginal bleeding ,abdominal pain ,uterine irritability is called classical sign and symptom
- Dark vaginal bleeding
- Urine output usually diminished.
- Uterus feels hard
- Back pain
- Uterine tenderness
- Fundal Height This may increase rapidly because of an expanding intrauterine hematoma.
- Shock -Shock is often due to blood loss and hypovolemia or due to coagulopathy. It is usually associated with severe hemorrhage(loss>40%).

CLINICAL FEATURES

- Abruption placenta
- D-Dark red bleeding
- E-Extended fundal height .
- T-Tender uterus .
- A-Abdominal pain /contraction .
- C-Concealed bleeding
- H-Hard abdomen .
- E-Experience DIC.
- D-Distressed baby .
- UO-Urine output

CLINICAL FEATURES:

	Revealed	Mixed (Concealed predominate)
Symptoms	Abd. Discomfort followed by vaginal bleeding	Acute abdominal intense pain followed by slight vaginal bleeding
Character of bleeding	Dark colour continuous	Blood stained serous discharge continuous
General condition	Proportionate to visible blood loss	Disproportionate shock usually present
Uterine ht.	Proportionate to GA	Disproportionately enlarged
Uterus feel	Normal with local tenderness	Tense, tender and rigid
Fetal parts	Easily identified	Difficult
FHS	Present	Absent
UO	Normal	diminished

Placenta previa Vs Placental abruption

	Placenta previa	*Abruptio placentae*
♦ **Clinical features:**		
• Nature of bleeding	(a) Painless, apparently causeless and recurrent (b) Bleeding is always revealed	(a) Painful, often attributed to preeclampsia or trauma and continuous (b) Revealed, concealed or usually mixed
• Character of blood	Bright red	Dark colored
• General condition and anemia	Proportionate to visible blood loss	Out of proportion to the visible blood loss in concealed or mixed variety
• Features of preeclampsia	Not relevant	Present in one-third cases
♦ **Abdominal examination:**		
• Height of uterus	Proportionate height to gestational age	May be disproportionately enlarged in concealed type
• Feel of uterus	Soft and relaxed	May be tense, tender and rigid
• Malpresentation	Malpresentation is common. The head is high floating	Unrelated, the head may be engaged
• FHS	Usually present	Usually absent especially in concealed type
♦ **Placentography (USG)**	Placenta in lower segment	Placenta in upper segment
♦ **Vaginal examination**	Placenta is felt on the lower segment	Placenta is not felt on lower segment. Blood clots should not be confused with placenta

CLASSIFICATION

- **Class 0: Asymptomatic**
- Discovery of a blood clot on the maternal side of a delivered placenta
- Diagnosis is made retrospectively
- **Class 1: Mild**
- No sign of vaginal bleeding or a small amount of vaginal bleeding.
- Slight uterine tenderness
- Maternal blood pressure and heart rate with in normal limits
- No signs of fetal distress

CLASSIFICATION

- **Class 2: Moderate**
- No sign of vaginal bleeding to moderate amount of vaginal bleeding
- Significant uterine tenderness with tetanic contractions
- Change in vital signs: maternal tachycardia, orthostatic changes in blood pressure.
- Evidence of fetal distress
- Clotting profile alteration: hyperfibrinogenemia
- **Class 3: Severe**
- No sign of vaginal bleeding to heavy vaginal bleeding
- Tetanic uterus/ board-like consistency on palpation
- Maternal shock
- Clotting profile alteration: hyperfibrinogenemia and coagulopathy
- Fetal death
- Classification of 0 or 1 is usually associated with a partial, marginal separation; whereas, classification of 2 or 3 is associated with a complete or central separation

DIAGNOSIS

- The diagnosis of abruptio placentae is primarily clinical, but findings from imaging, laboratory, and postpartum pathologic studies can be used to support the clinical diagnosis.
- Women with an acute abruption classically present with the abrupt onset of mild to moderate vaginal bleeding and abdominal and/or back pain, accompanied by uterine contractions.
- The uterus has increased tone/rigidity and may be tender both during and between contractions.
- In patients with classic symptoms, fetal heart rate (FHR) abnormalities or intrauterine fetal demise and/or disseminated intravascular coagulation strongly support the clinical diagnosis and indicate extensive placental separation.

ASSESSMENT OF ANTEPARTUM HEMORRHAGE

- History
- The following questions are useful to ask in the assessment of antepartum hemorrhage:
- How much bleeding was there and when did is start?
- Was it fresh red or old brown blood, or was it mixed with mucus?
- Could the waters have broken (membranes ruptured?)
- Was it provoked (post-coital) or not?
- Is there any abdominal pain?
- Are the fetal movements normal?
- Are there any risk factors for abruption? e.g. smoking/drug use/trauma – domestic violence is an important cause.
- If the bleed is ongoing, or if there has been a significant vaginal bleed, **ABC assessment and resuscitation** is vital. If the woman is clinically stable, proceed to examination.

GENERAL EXAMINATION

- On examination, the uterus may be **woody** (tense all of the time) and painful on palpation.
- On general examination, the following should be assessed:
- Pallor, distress, check capillary refill, are peripheries cool?
- Is the abdomen tender?
- Does the uterus feel 'woody' or 'tense' (which may indicate placental abruption)?
- Are there palpable contractions?
- Check the lie and presentation of the fetus/fetuses. Ultrasound can be used to help.
- Check fetal wellbeing with a cardiotocograph (CTG) at 26 weeks gestation or above: (otherwise auscultate the fetal heart only).
- Read the hand-held pregnancy notes: are there scan reports? This will be helpful in establishing whether there could be placenta praevia

ASSESSMENT OF BLEEDING

- Lastly, the bleeding itself should be assessed:
- **Externally** e.g. by looking at pads.
- **Cusco speculum examination**: avoid this until placenta praevia has been excluded by USS.
  - Look for whether blood is fresh red or dark. How much blood is there? Are there clots? Are there any cervical lesions? Is there any cervical dilatation, or any chance that the membranes have ruptured?
  - **Take triple genital swabs** to exclude infection if the bleeding is minimal

VAGINAL EXAMINATION

- **Digital vaginal examination**: A digital vaginal examination with known placenta praevia should NOT be performed as it could cause massive bleeding.
  - In minor bleed, when placenta praevia is excluded, it can help to establish whether the cervix is beginning to dilate.
  - Avoid digital VE if the membranes have ruptured.

INVESTIGATIONS

- If major bleeding is suspected, resuscitate and perform investigations simultaneously.
- **Hematology**
- **Full blood count** – assess any maternal anemia.
- **Clotting profile-**PT/PTT (prothrombin time/partial thromboplastin time)
- Serum fibrinogen and fibrin-split products (the most sensitive indicator)
- **Kleihauer test** – if the woman is Rhesus negative (to determine the amount of feto-maternal hemorrhage and thus the dose of Anti-D required).
- **Group and Save** – if blood group is unknown.
- **Cross-match** – if the clinical presentation is likely to warrant transfusion.

CONT..

- **Biochemistry**
- These are performed to exclude hypertensive disorders including pre-eclampsia and HELLP syndrome, and any other organ dysfunction:
- Urea and electrolytes
- Liver function tests
- **Assess Fetal Wellbeing**
- In women above 26 weeks gestation, a cardiotocograph (CTG) should be performed to assess fetal wellbeing.
- **Imaging**
- An **ultrasound scan** should be performed when patient is stable. In placental abruption, a retro placental hematoma may be visible.

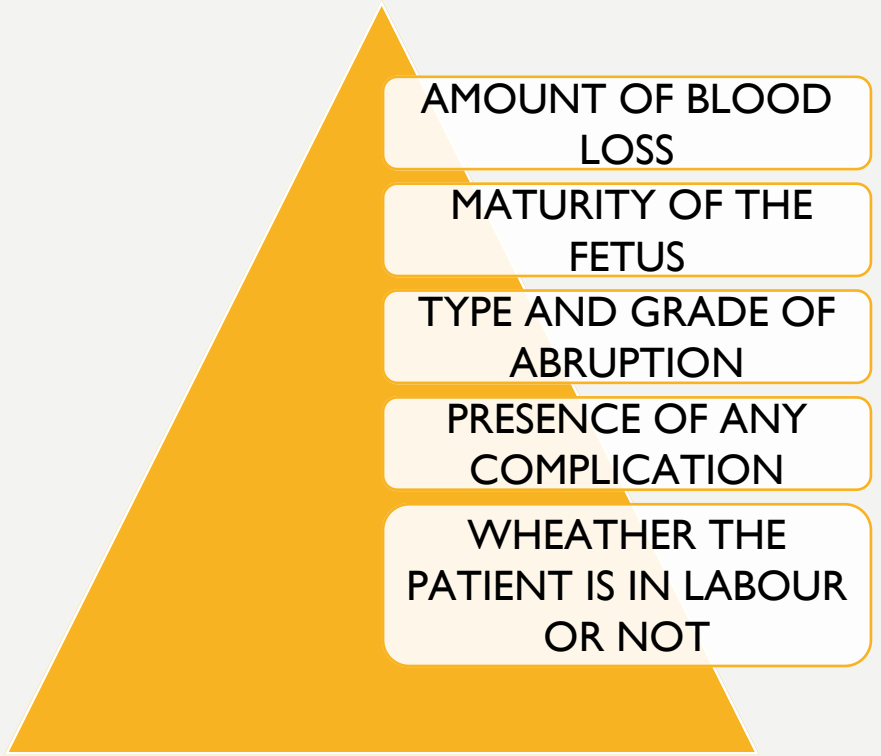
CONT..

- Ultra sonographic Criteria for Diagnosis of Placental Abruption
- 1. Pre placental collection under the chorionic plate (between the placenta and amniotic fluid)
- 2. Jello-like movement of the chorionic plate with fetal activity.
- 3. Retro placental collection.
- 4. Marginal hematoma
- 5. Sub chorionic hematoma
- 6. Increased hetero genous placental thickness (more than 5 cm in a perpendicular plane)
- 7. Intra-amniotic hematoma

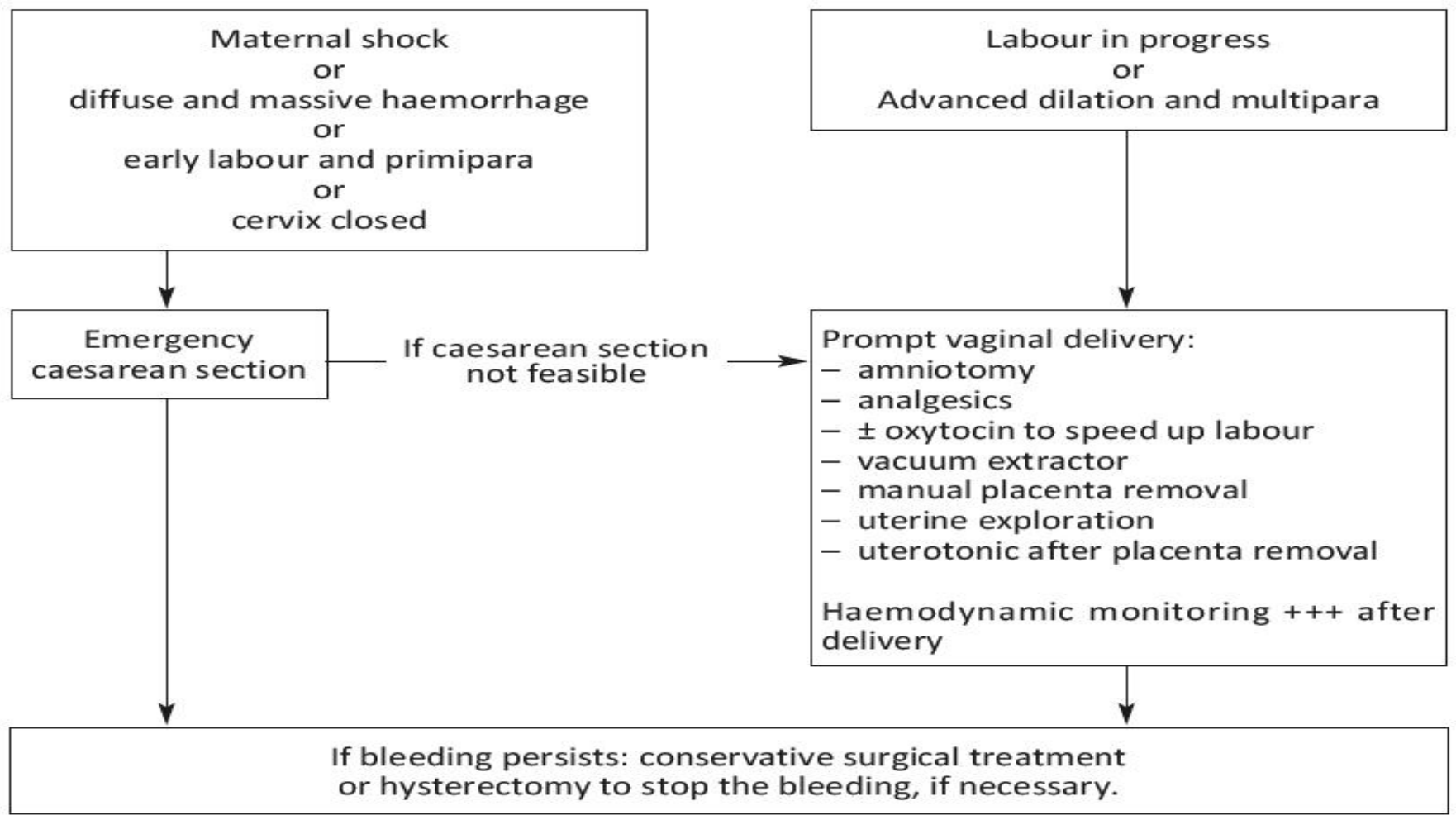
PREVENTION

- Primary prevention
- 1. to avoid in smoking and alcohol.
- 2.take the prenatal folic acid .
- 3.control high blood pressure .
- 4. reduce risk of trauma .
- 5.to promote safe care environment .
- 6.keep the regular schedule of prenatal checks .
- 7.to avoid the risk factor and complication.
- Secondary prevention
- 1.fetal anomalies . 2.history of prior preterm labour . 3.multiple gestation. 4.uterine anomalies . 5.series of maternal disease . 6.idiopathic .

TREATMENT ASSESSMENT

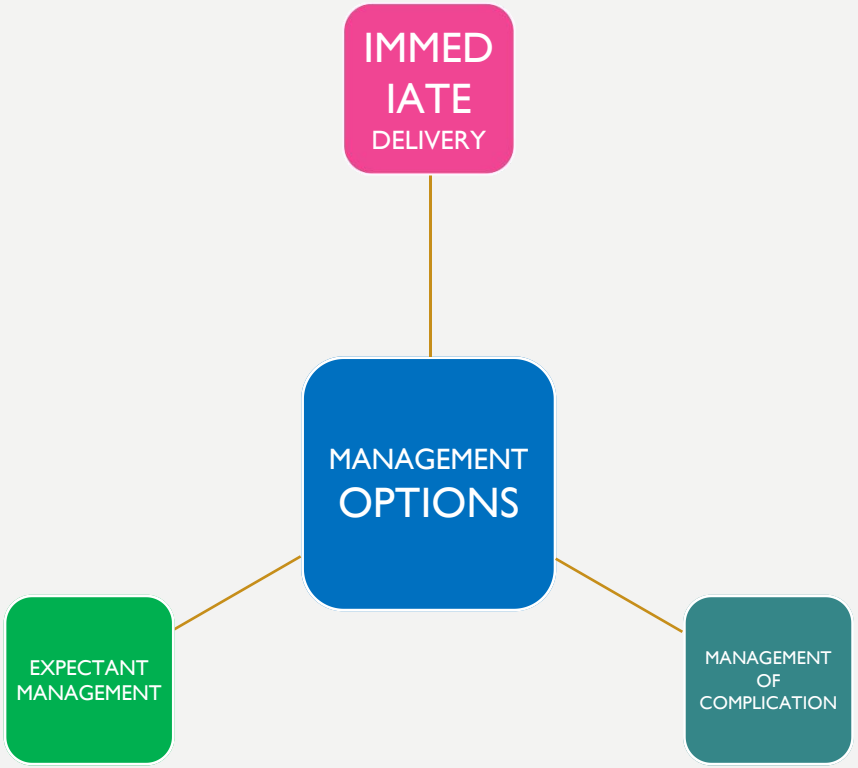


MANAGEMENT


Maternal shock
or
diffuse and massive haemorrhage
or
early labour and primipara
or
cervix closed
Labour in progress
or
Advanced dilation and multipara
Emergency caesarean section
If caesarean section not feasible
Prompt vaginal delivery:
– amniotomy
– analgesics
– ± oxytocin to speed up labour
– vacuum extractor
– manual placenta removal
– uterine exploration
– uterotonic after placenta removal
Haemodynamic monitoring +++ after delivery
If bleeding persists: conservative surgical treatment
or hysterectomy to stop the bleeding, if necessary.

EMERGENCY MEASURES

- EMERGENCY MEASURES
- 1. BLOOD (HB,COAGULATION PROFILE)
- 2. RINGER'S SOLUTION DRIP IS STARTED



IMMEDIATE DELIVERY THE PATIENT

Patient in labour

- Labour is accelerated by low rupture of the membranes,
- oxytocin drip may be started to accelerate labour vaginal delivery is favored in case with
- 1. limited placental abruption
- 2. FHR reassuring
- 3. placental abruption with dead fetus the

patient not in labour

Induction of the labour cesarean section

- INDUCTION OF THE LABOUR
- Labour is quickly completed (4-8hours) retro placental clot is expelled simultaneously with delivery of baby inj.oxytocin 10.iu iv(slow),or inj.methergine 0.2 mg iv given

EXPECTANT MANAGEMENT

- Bleeding is slight and stopped, the goal of the expectant management is prolong the pregnancy with hope of improving maturity and survival.
- Patient should be monitor in the labour ward for 24-48 hrs.

INDICATIONS FOR CAESAREAN SECTION

- Salvageable baby,
- Severe vaginal bleeding,
- Poor progress,
- Transverse lie, inadequate pelvis
- Post delivery -watch out for PPH
- Myometrial myofibrin loose contractility
- Failure to clot

COMPLICATION

- Maternal
- 1. maternal mortality .
- 2.hypovolaemic shock .
- 3. renal failure .
- 4.DIC.
- 5.PPH.
- 6.Complication of massive transfusion.
- 7.sheehans syndrome .
- Fetal- 1.fetal death. 2.hypoxic brain injury. 3.iugr. 4.neonatal anemia. 5.congenital malformation .

NURSING CARE

Abruptio Placenta

Nursing Management

- O2 therapy
- Monitor FHR tracing
- Monitor fundal height
- Bed rest- left lateral position
- Monitor V.S. for shock
- Monitor for DIC
- Emotional support

CONT..

- All maternal and fetal vital sign should be checked frequently and recorded carefully .
- The amount and nature of bleeding to be assessed and recorded.
- Contraction pattern and cervical status to be monitor if the women is the active labor.
- Urinary output and skin colour should be observe and recorded.
- Physical comfort and emotional support must be provided the women must be assisted to rest in left lateral position .
- Fundal height and abdominal girth with are to be measured hourly an increase indicate continued bleeding behind the placenta.
- FHR is should be monitor continuously and oxygen to be administer to relive hypoxia .
- Observation must be made for any developing complication such as .hypotension ,hypovolemia shock and DIC .
- Instruct to avoid in smoking and alcohol .

CONT..

- **Nursing Management**
- A vital role is also upheld by the nurses during this situation. Their accurate assessment would be one of the baseline data for all health care providers to plot the care plan for the patient.
- **Nursing Assessment**
- Assess for signs of shock, especially when heavy bleeding occurs.
- Assess if the bleeding is external or internal.
- Monitor contractions if separation occurs during labor.
- Obtain baseline vital signs.
- Assess for the time the bleeding began, the amount and kind of bleeding, and interventions done when bleeding occurred if it started before admission.
- Assess for the quality of pain.

NURSING DIAGNOSIS

- Deficient fluid volume related to bleeding during premature placental separation
- **Nursing Interventions**
- Place the woman in a lateral, not supine position to avoid pressure in the vena cava.
- Monitor fetal heart sounds.
- Monitor maternal vital signs to establish baseline data.
- Avoid performing any vaginal or abdominal examinations to prevent further injury to the placenta.
- **Evaluation**
- Maternal vital signs are all within the normal range, especially the blood pressure.
- Urine output should be more than 30mL/hr.
- No bleeding or minimal amount of bleeding observed.
- Uterus is not tense and rigid.
- Fetal heart sounds are within the normal range.

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Thank you!